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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Paper No. 19

Application Number: 09/608,976
Filing Date: June 30, 2000
Appellant(s): BROWN ET AL.

Sherry Tipton

For Appellant

MAILED

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Technology Center 2100

EXAMINER'S ANSWER

This is in response to the appeal brief filed 03/22/2004.

(1) *Real Party in Interest*

A statement identifying the real party in interest is contained in the brief.

(2) *Related Appeals and Interferences*

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

(3) *Status of Claims*

The statement of the status of the claims contained in the brief is correct.

(4) *Status of Amendments After Final*

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) *Summary of Invention*

The summary of invention contained in the Appeal Brief is essentially correct.

The examiner however, would like to point to the following anomalies the invention summarized in between the Appeal Brief and the invention described in the instant specification.

For example, at page 2, lines 1-7 of the Appeal Brief which recites: "the invention relates to a method of presenting an execution plan for a query that includes

determining steps of the query execution plan for a parallel database system, displaying the steps of the query execution plan in the graphical user interface, and depicting parallel execution of steps of the query execution plan in the graphical user interface, where such depicting includes displaying plural elements corresponding to concurrently executing plural steps on respective processors of the database system (claim 1) See also, claim 30".

However, at the referred page 5, lines 4-9 of the instant specification states:

"The query execution plans selected by the optimizer 40 can be stored in the target system 14, with the execution plan accessible by a visual explain and compare module 42 to graphically depict or display the execution plan...."

Thus, contrary to the claimed invention, the query execution plan being displayed in the graphical user interface can be stored prior to utilization, which is not necessary to reflect (or depict) a plurality of elements corresponding to concurrently executing plural steps on respective processors of the database system.

However, because the metes and bounds of the claimed invention are generally understood and can be emulated in a test system 10, the examiner has decided the claims are compliant with 35 U.S.C. § 112, second paragraph.

(6) Issues

The appellant's statement of the issues in the brief is correct.

(7) Grouping of Claims

The appellant's statement in the brief that certain claims do not stand or fall together is not agreed with because Claims 3, 15, 17, 19 and 34 are dependent claims of their associated base groups which should stand or fall together with their respective base claims. Furthermore, the examiner notices there is a typing error in the phrase "Within each group, the claims stand and all together".

(8) Claims Appealed

The copy of the appealed claims contained in the Appendix to the brief is correct.

(9) Prior Art of Record

5857180	HallMark et al.	1-1999
6434545	MacLeod et al.	8-2002
6289334	Reiner et al.	9-2001
6067542	Carino Jr.	5-2000

(10) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious

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at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-6, 9-22, 30, 31 and 34-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hallmark et al. (U.S. 5,857,180) in view of MacLeod et al. (6,434,545) (MacLeod).

Regarding claims 1, 11 and 30, Hallmark discloses: A method and an article of presenting an execution plan for a query, comprising:

determining steps of the query execution plan in a parallel database system (see Abstract, lines 1-19; col. 8, lines 64 to col. 9, lines 4, Hallmark);

However, Hallmark did not specifically detail the step of depicting and displaying the parallel execution steps. On the other hand, MacLeod discloses: displaying the steps of the query execution plan in a graphical user interface (e.g., col. 8, lines 7-49, Fig.(s), 5-9, MacLeod), depicting parallel execution of steps of the query execution plan in the graphic user interface (e.g., col. 8, lines 29-49, Fig. 6, MacLeod). Thus, at the time the invention was made, it would have been obvious to a person of ordinary skill in the art, to include the steps for displaying the query execution plan of Hallmark's system in parallel as taught by MacLeod. The motivation is to provide a user with a GUI of multiple query execution plans, such that the user can select, compare and optimizing a query in the massively parallel execution system.

Hence the result that Hallmark/Macleod combination system would disclose depicting the parallel execution of steps comprises displaying plural elements corresponding to concurrently executing plural steps on respective processors of the parallel database system (e.g., Fig. 7, col. 9, lines 5-13, MacLeod; col. 6, lines 23-54, Hallmark).

As per claim 2, the limitations of this claim have been noted in the rejection of claim 1 above. In addition, Hallmark/ MacLeod disclose: wherein determining the steps comprises determining steps of the query execution plan in the parallel database system running in a multi-processing platform having plural nodes (col. 6, lines 31-45, Hallmark).

Regarding claim 3, the limitations of this claim have been noted in the rejection of claim 1. Applicant's attention is directed to the rejection of claim 1 above. In addition, Hallmark/ MacLeod discloses: Wherein determining the steps comprises determining steps of the query execution plan in the parallel database system running in a platform having plural virtual processors to handle access to data in the parallel database system (co. 7, lines 1-19, Hallmark).

Regarding claim 4, the limitations of this claim have been noted in the rejection of claim 1. Applicant's attention is directed to the rejection of claim 1 above. In addition,

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Hallmark/ MacLeod disclose: displaying the steps as icons (211, Fig. 6 and corresponding text, MacLeod.).

As per claim 5, the limitations of this claim have been noted in the rejection of claim 1. Applicant's attention is directed to the rejection of claim 1 above. In addition, Hallmark/MacLeod discloses: wherein the database management system is executable in a platform (see window 200, Fig. 6, and corresponding text, MacLeod); wherein displaying the icons comprises display one or more of the icons selected from the group consisting of an icon representing a table (col. 8, lines 7-27, MacLeod), an icon representing an operation performed on a component of the platform (col. 8, lines 7-27, MacLeod), an icon representing a query statement (col. 7, lines 49-56, MacLeod), icon representing an operation performed on two or more tables (col. 8, lines 7-48, MacLeod).

As per claims 6 and 31, the limitations of these claims have been noted in the rejection of claims 1 and 30, respectively. In addition, Hallmark/MacLeod discloses the steps of the query execution plan are performed by an optimizer (col. 8, lines 38-45, Hallmark).

As per claim 9, the limitations of this claim have been noted in the rejection of claim 1. Applicant's attention is directed to the rejection of claim 1 above. In addition,

Carino/MacLeod disclose displaying explain text of the query execution plan (col. 6, lines 55-61, MacLeod).

Regarding claim 10, the limitations of this claim have been noted in the rejection of claim 9. Applicant's attention is directed to the rejection of claim 9 above. In addition, Hallmark/MacLeod disclose: wherein the explain text comprises displaying the explain text in a first screen and wherein displaying the steps of the query execution plan comprises displaying the steps in a second screen (Fig. 5 and corresponding text, MacLeod).

Regarding claim 11 specifically, Hallmark/MacLeod disclose: a method of testing performance of a query, comprising:

Determining a first execution plan of the query under a first condition and a second execution plan of the query under a second condition (e.g., Fig. 6, MacLeod, col. 6, lines 11 -54, Hallmark); display the first and second execution plans concurrently to enable comparison of the execution plans (e.g., Fig(s). 6-7 and corresponding text, MacLeod).

Regarding claim 12, the limitations of this claim have been noted in the rejection of claim 11. Applicant's attention is directed to the rejection of claim 11 above. In addition, Hallmark/MacLeod disclose: wherein displaying the first and second execution

plans comprises displaying the execution plans in a graphical user interface (Fig. 5 and Fig. 6 and corresponding text, MacLeod).

Regarding claim 13, the limitations of this claim have been noted in the rejection of claim 11. Applicant's attention is directed to the rejection of claim 11 above.

Hallmark/MacLeod disclose: wherein displaying the first and second execution plans comprises displaying the execution plans in a graphical user interface having a first screen to display the first execution plan and a second screen to display the second execution plan (Fig. 5 and Fig. 6 and corresponding text, MacLeod).

As per claim 14, the limitations of this claim have been noted in the rejection of claim 11. Applicant's attention is directed to the rejection of claim 11 above. In addition, Hallmark/MacLeod disclose: displaying the first and second execution plans comprises displaying a collection of icons to represent steps of each of the execution plans (col. 7, lines 49 to col. 8, lines 51, MacLeod).

As per claim 15, the limitations of this claim have been noted in the rejection of claim 11. Applicant's attention is directed to the rejection of claim 11 above. In addition, Hallmark/MacLeod discloses: a third execution plan of the query under a third condition (col. 8, lines 57 to col. 9, lines 5, Hallmark) and displaying the first, second and third execution plans concurrently to enable comparison of the execution plans (Fig. 9 and corresponding text, MacLeod).

Regarding claims 16-17, the limitations of this claim have been noted in the rejection of claim 11. Applicant's attention is directed to the rejection of claim 11 above. In addition, Hallmark/MacLeod discloses: wherein determining the first execution plan comprises determining an execution plan for the query in cooperation with a first version of a software module of a parallel database system (col. 16, lines 32-42, Hallmark); wherein determining the second execution plan comprises determining an execution plan for the query in cooperation with a second version of a software module of a parallel database system (col. 16, lines 43-52, Hallmark);

Regarding claims 18-19, the limitations of this claim have been noted in the rejection of claim 11. Applicant's attention is directed to the rejection of claim 11 above. In addition, Hallmark/MacLeod discloses: wherein determining the first execution plan comprises determining an execution plan for the query in the system having a first arrangement and the second execution plan comprises determining an execution plan for the query in a system having a second arrangement (see col. 16, lines 53-61, Hallmark).

Regarding claim 20, the limitations of this claim have been noted in the rejection of claim 11. Applicant's attention is directed to the rejection of claim 11 above. In addition, Hallmark/MacLeod disclose: wherein determining the first execution plan

comprises determining execution plan involving a table having a first content" (e.g., Fig. 7, MacLeod; col. 16, lines 53-61, Hallmark).

Regarding claim 21-22, the limitations of this claim have been noted in the rejection of claim 11. Applicant's attention is directed to the rejection of claim 11 above. In addition, Hallmark/MacLeod disclose: wherein determining a second content contains statistics (e.g. Fig. 6, MacLeod; col. 17, lines 16-23, Hallmark).

Regarding claim 34, the limitations of this claim have been noted in the rejection of claim 30. In addition, Hallmark/MacLeod disclose: further determine a second execution plan of the query for the parallel database system (col. 8, lines 57 to col. 9, lines.5, Hallmark); display the step of the second execution plan concurrently with the steps of the first execution plan in the graphical user interface (Fig. 5 and Fig. 6 and corresponding text, MacLeod).

Regarding claim 37, the limitations of this claim have been noted in the rejection of claim 11. In addition, Hallmark/MacLeod disclose: wherein determining the first and second execution plans comprises determining the first and second execution plans in parallel database system environment (col. 6, liens 22-54, Hallmark); and displaying each of the first and second execution plans comprises displaying plural elements corresponding to concurrently executing plural steps on respective processors of the parallel database system environment (Fig. 5 and 6, and corresponding text, MacLeod).

Regarding claims 35, 38 and 40, the limitations of these claims have been noted in the rejection of claims 1, 37 and 30 above, respectively. In addition, Hallmark/MacLeod disclose: wherein display the plural elements comprises displaying the plural elements side-by-side to indicate concurrent execution of the respective steps (col. 7, lines 49-61, MacLeod).

Regarding claims 36, 39 and 41, the limitations of these claims have been noted in the rejection of claims 35, 38 and 40 above, respectively. In addition, Hallmark/MacLeod disclose: further comprising displaying other elements in sequence with the plural side-by-side elements to indicate sequential execution of other steps corresponding to the other elements (col. 7, lines 49-61, MacLeod).

Claim Rejections - 35 USC § 103 (Continues)

Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over MacLeod et al. (U.S 6434545) (MacLeod) in view of Reiner et al. (U.S 6289334) (Reiner).

Regarding claim 23, MacLeod discloses: a graphic user interface (47, Fig. 1 and corresponding text, MacLeod); the controller to display a representation of the execution plan in the graphical user interface (23, Fig. 1 and corresponding text, MacLeod). However, MacLeod didn't specifically disclose a parallel database system and a

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controller to determine an execution plan of a query based on emulation data that emulates an environment of a target system. On the other hand, Reiner discloses in which a parallel database system is implemented (col. 30, lines 13-30, Reiner); and a controller is used to determine an execution plan of a query based on emulation data that emulates an environment of a target system (col. 31, lines 1-67, Reiner). Thus, at the time invention was made, it would have been obvious to a person of ordinary skill in the art to include a controller to determine an execution plan of a query based on emulation data that emulates an environment in the system of MacLeod as taught by Reiner. The motivation would have been enable emulation of the target system so as to run on other system environment as well. This would have provided the further advantage of wider use of the MacLeod system as well universality, which is much desired in the art.

Claims 24-27 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over MacLeod et al. (U.S 6434545) (MacLeod) in view of Reiner et al. (U.S 6289334) (Reiner) as applied to claim 23 above, and further in view of Carino Jr (U.S 6067542)..

Regarding claims 24-27 and 29, the limitations of this claim have been noted in the rejection of claim 23. Applicant's attention is directed to the rejection of claim 23 above. However, MacLeod/Reiner does not disclose: wherein the emulation data comprises cost-related information including a number of nodes in the target system and number of CPUs in each node. On the other hand, Carino discloses: wherein the

emulation data comprises cost-related information including a number of nodes in the target system and number of CPUs in each node (see Fig. 4 and corresponding text, Carino Jr.). Thus, at the time invention was made, it would have been obvious to a person of ordinary skill in the art to include in the emulation data, cost-related information, a number of nodes in the target system and number of CPUs in each node. One of ordinary skill person in the database art would have been motivated to modify the combination system of MacLeod and Renner to include the cost related information as taught by Carino Jr. in order to arrive at a system that reveals costs while optimizing information for the executing of query plans as a highly desirable result.

Regarding claim 25 specifically, the combined system of MacLeod/Refiner/Carino further discloses: wherein the emulation data comprises cost-related information including a number of virtual processors running in the target system (col. 13, lines 40-64, Carino Jr.).

Regarding claim 26 specifically, the combined system of MacLeod/Refiner/Carino further discloses: " wherein the emulation data comprises cost-related information relating to costs of doing operations in the target system (see col. 14, lines 61-65, Carino Jr.).

Regarding claim 27 specifically, the combined system of MacLeod/Refiner/Carino further discloses: wherein the emulation data represents a target system having a multi-node parallel processing system (see col. 9, lines 7 -14, Carino, Jr.).

Regarding claim 29 specifically, the combined system of MacLeod/Refiner/Carino further discloses: wherein the emulation data represents a target system running plural virtual processors for handling access to the parallel database system (see Fig. 4 and corresponding text, Carino, Jr.).

Claims 7, 8, 32 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hallmark et al. (U.S 5857180) (Hallmark) in view of MacLeod et al. (6434545) (MacLeod) and further in view of Reiner et al. (U.S 6289334) (Reiner).

Regarding claims 7,8, 32 and 33, the limitations of this claim have been noted in the rejection of claim 6. Applicant's attention is directed to the rejection of claims 6 above. However, Hallmark/MacLeod didn't disclose: the steps of the query execution plan are performed by the optimizer based on emulated environment data of a target system, emulated environment data present in a test system, and the target system comprising the parallel database system. On the other hand, Reiner disclose: wherein determining the steps of the query execution plan are performed by an optimizer based on emulated environment data of a target system, emulated environment data present in a test system, and the target system comprising the parallel database system (col.

31, lines 1-14, Reiner). Thus, at the time invention was made, it would have been obvious to a person of ordinary skill in the art to include the steps of the query execution plan being performed by an optimizer based on emulated environment data of a target system, emulated environment data present in a test system in the combination system of Hallmark/MacLeod as taught by Reiner. The motivation would have been to enable the emulation of the target system so that it can run on the other system environments as well, thereby, increasing the utility of the combined system while simultaneously universalizing the system.

As per claim 8 specifically, the combination of Hallmark/MacLeod/Reiner further discloses: the steps of the query execution plan is performed in a test system based on emulated environment data of a target system that is separate from the test system (col. 31, lines 55-67, Reiner), the target system comprising the parallel database system (col. 31, lines 24-39, Reiner).

Regarding claim 32 specifically, the combination of Hallmark/MacLeod/Refiner discloses: wherein the instructions when executed cause the controller to receive environment information to emulate a target database system (col. 34, lines 30-42, Reiner).

Regarding claim 33 specifically, the combination of Hallmark/MacLeod/Refiner discloses: wherein the instructions when executed cause the controller to determine the

execution plan of the query based on the environment information (col. 35, lines 54-60, Reiner).

(11) Response to Argument

In appellant's Brief, filed March 22, 2004, Appellant argues the following specific points in section A:

As to claim 1, appellant argues the following:

1. "Figures 5 and 6 of MacLeod, which are related to the passages cited by the examiner, clearly illustrate the point that MacLeod does not teach or suggest displaying or depicting parallel execution of plans in a graphical user interface.

2. "Because neither Hallmark nor MacLeod teaches or suggests either the displaying or depicting acts recited in claim 1, their hypothetical combination also fails to disclose or suggest the elements of the claim 1. For at least this reason, a prima facie obviousness rejection has not been established with respect to claim 1."

In reply to arguments of 1 and 2 above, the Office first points out that one can not show nonobviousness by attacking references individually. Where the rejections are based upon the teaching of a combination of references, as it is here, each reference must be read not in isolation, but for what is fairly teaches in combination with the prior art as a whole. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F. 2d 1091, 231 USPQ 375 (Fed. Cir. 1986). As set forth in the October 17, 2003 Final Office Action, the rejection of claims 1-6, 9-22, 30, 31 and 34-41

was made under 35 U.S.C. § 103(a) as being unpatentable over the combination of Hallmark and MacLeod et al., not MacLeod alone.

Furthermore, as cited in the above paragraphs, Hallmark specifically discloses determining steps of the query execution plan in a parallel database system by way of table query to partition and transport data of rows between set of processes for concurrently executing the query plan in a master/slaves thread environment (see Abstract, lines 1-19; col. 8, lines 64 to col. 9, lines 4, Hallmark), wherein the query plan can be compiled into a row source tree for parallel processing (e.g., Abstract, lines 5-10, col. 5, lines 23-33, Fig. 3A, Hallmark). Hallmark did not specifically teach that the query execution plan is displayed/depicted in a Graphic User Interface (or GUI). However, MacLeod disclosed: displaying the steps of the query execution plan in a graphical user interface (e.g., col. 8, lines 7-49, Fig.(s), 5-9, MacLeod), depicting parallel execution of steps of the query execution plan in the graphic user interface (e.g., col. 8, lines 29-49, Fig. 6, MacLeod). Hence, one of ordinary skill in the art at the time invention was made, would in fact, contrary to applicant's arguments, look to incorporate an interface as taught by MacLeod for displaying and depicting the claimed query execution plan in Hallmark's system. The motivation would have been to provide a user with a GUI of multiple query execution plans, such that the user can select, compare and optimize a query in the massively parallel execution system. In addition, Hallmark/MacLeod disclose: wherein depicting the parallel execution of steps comprises displaying plural elements corresponding to concurrently executing plural steps on respective processors of the parallel database system (e.g., Fig. 7, col. 9, lines 5-13, MacLeod; col. 6, lines 23-

54, Hallmark). As such, the examiner contends that the combination of Hallmark and MacLeod would be result in a system meeting the claimed invention and having a reasonable expectation of success.

As to claim 3, Appellant argues the following:

“With respect to claim 3 (which depends from claim 1), the Examiner cited passage does not (i.e., col. 7, lines 1-19, of Hallmark) refer whatsoever to determining steps of a query execution plan for a parallel database system having plural virtual processors.”

In reply, the Examiner points out that the cited col. 7, lines 1-19 of Hallmark specifically discloses that the determining steps of the claimed query execution plan is performed by the Database Management System (DBMS) wherein the DBMS including the partitioning processor (or the parser) for parsing the query execution plan are implemented via software, therefore, the various processors of a DBMS including the partitioning parser are virtual processors.

As to claim 35, Appellant argues the following:

“Claim 35, which depends from claim 1, further recites that displaying the plural elements comprises displaying the plural elements side-by-side ...Although the passage of MacLeod cited by the Examiner (i.e. col. 7, lines 49-61) refers to the display of icons,

such icons do not correspond to concurrently executing plural steps on processors of parallel database system that are displayed side-by-side.”

In reply, the Examiner points out that Appellant's argument is misdirected because it points to an exception of MacLeod without taking into consideration what the reference teaches as a whole. More so, the rejection was based on the combination of Hallmark and MacLeod and not MacLeod alone. The combined system specifically discloses loop processing to display a unique icon that corresponds to current operations and branches to parent nodes for each query statement in order to construct a new tree structure that represents a query execution plan [e.g., col. 7, lines 49-61 of MacLeod]. Wherein icons are displayed in the loop as shown side-by-side and connected via branches to form a parent/child hierarchical tree in Fig. 6 of MacLeod. Furthermore, the query plan execution environment is on processors of parallel database system [e.g., Abstract, lines 1-19; col. 8, lines 64 to col. 9, lines 4, Hallmark]. Hence, when the GUI of MacLeod is combined with the parallel query processing system of Hallmark, the expected result would have been side-by-side parallel displays of the query plan with executions done by Hallmark.

As to claim 34, Appellant argues the following:

“Claim 34, which depends from claim 30, recites the displaying of steps of the second execution plan concurrently....The Examiner cited to Figures 5 and 6 and corresponding text of MacLeod as disclosing the displaying act....Neither Figure 5 nor

Figure 6 teaches or even remotely suggests displaying steps of a second execution plan for a query concurrently with steps of the first execution plan for the same query in a graphical user interface.”

In reply, the Examiner notes that the features upon which applicant relies (i.e., the same query in a graphical user interface) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

As to claim 11, Appellant argues the following:

“Claim 11...In citing MacLeod as disclosing the displaying act, the Examiner does not address how MacLeod teaches or suggests concurrently displaying first and second query execution plans of the same query under first and second conditions...Moreover, Figures 6 and 7 are separate screens show at different times, and therefore, cannot possibly satisfy the claim element of displaying first and second execution plans concurrently.”

In reply, the Examiner reaffirms that Appellant's argument is unpersuasive because it attempts to show nonobviousness by attacking a piecemeal passage of MacLeod where the underlying rejection is based on multiple references of the combined prior art (i.e. Hallmark and MacLeod) as recited above. In addition, the

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examiner notes that the claimed features (e.g., displaying first and second query execution plans of the same query under first and second conditions) are not recited in claim 11. Thus, although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Furthermore, appellant's attention is directed to the parent/child source tree structure shown by MacLeod at Figures 6 and 7 as well as the description at col. 6, lines 11-54 disclosed by Hallmark, wherein the tree structures satisfy the claimed element of displaying first and second execution plans via the hierarchical structure of the icon-tree [e.g., see col. 11, lines 20-25, MacLeod). In addition, the citation of col. 6, lines 1-54 of Hallmark further describes how the combined system uses the master/slave thread to control the Data Flow Operators (or DFOs) of a row source tree in a concurrent database processing environment. Thus, contrary to appellant's assertions, the combined system clearly teaches the claimed features.

As to claim 15, Appellant argues the following:

"neither Hallmark nor MacLeod discloses or even remotely suggests displaying first, second and third execution plans concurrently to enable comparison of the execution plans."

In reply, the examiner points out that the limitations of this claim have been addressed in the rejection of claim 11 above. Applicant's attention is directed to the rejection of claim 11 above, as well as corresponding reply to arguments. In addition,

Hallmark/MacLeod discloses: the third execution plan of a query under a third condition (col. 8, lines 57 to col. 9, lines 5, Hallmark) and displaying the first, second and third execution plans concurrently to enable comparison of the execution plans (Fig. 9 and corresponding text, MacLeod). Furthermore, the measure of patentability is not what Hallmark or MacLeod alone teach and suggest, but what those teachings would have meant to one of ordinary skilled person in the art at the time the invention was made. In the instant case the Hallmark and MacLeod patents in the possession of an ordinary skilled artisan would have led him/her to derive a combination system that would have displayed any number of parallel execution plans as taught by Hallmark using a GUI to communicate with the user as taught by MacLeod, for the purpose of attaining a highly efficient system. The number of processes that are displayed in parallel would not have been limited in the Hallmark/MacLeod combinations.

As to claims 16-17, Appellant argues: "the Office Action makes no mention whatsoever of determining different execution plans for different version of a software module."

In reply, the examiner disagrees. The examiner specifically pointed out that Hallmark expressly disclosed the claimed features at col. 16, lines 32-42, lines 43-52 and Fig. 10B. That is the reference disclosed a determination is made clearly to execute different executions plans performed by at least two different versions of

software modules (i.e., in this case the slave set 1 and slave set 2, Fig. 10B of Hallmark).

As to claims 18-19, Appellant argues: "The cited passage in column 16 of Hallmark makes no mention of determining two execution plans for two arrangements of a system."

In reply, the examiner disagrees. The examiner first points out that Appellant fails to specify the patentable novelty of the claimed two arrangements of the claimed system. Furthermore, Hallmark expressly disclosed the claimed features at col. 16, lines 53-61 and associated Fig(s). 10B – 10C. Wherein, Hallmark clearly describes different query execution environment are arranged for different execution slave thread processing [e.g., the slave execution plan set 1 and slave execution plan set 2], such that the initial arrangement of table queue format, table queue descriptor and table queue descriptor contents (such as TQ ID, partitioning type, and connection code) are arranged based on the determination of the partitioning type of the Table Queue (TQ).

As to claims 20 and 21, Appellant argues: "the cited portions of MacLeod and Hallmark (i.e., Fig. 6 of MacLeod and Col. 17, lines 16-23 of Hallmark) do not disclose or suggest determining a first execution plan that involves a table having a first content, and determining a second execution plan that involves the table having a second content

In reply, the examiner disagrees. The examiner first points out that claim 21 is depend on claim 20 and claim 22 is depend on claim 21, Appellant arguments do not comply with 37 CFR 1.111 (c) because they do not clearly point out the patentable novelty which he or she thinks the claims present in view of the state of the art disclosed by the references cited or the objections made. Further, they do not show how the invention avoids such references or objections.

As to the arguments of claims 37 and 38, since the combined system of MacLeod and Hallmark clearly calls for plural elements displayed side-by-side to indicate concurrent execution of respective steps, as discussed with respect to claim 35 above, contrary to appellant's arguments, the combination of MacLeod and Hallmark is definitely a successful one.

In section B, appellant argues: 1) "There is no teaching whatsoever in Reiner of emulating an environment of a target system in which a parallel database system is implemented."; 2) "A *prima facie* case of obviousness has thus not been established with respect to claim 23. Because of the improper application of the combination of MacLeod and Reiner against claim 23, the obviousness rejection of claim 24-27 and 29 over MacLeod, Reiner, and Carino is also defective."

In section C, appellant argues: "As discussed above in connection with claim 23, Reiner fails to disclose emulation of a target system that includes a parallel database system. Therefore, the hypothetical combination of Hallmark, Macleod, and Reiner fails to disclose or suggest the subject of claim 7."

In reply, the examiner disagrees. The examiner counters by pointing out that MacLeod clearly discloses displaying a representation of query execution plan in a Graphic User Interface (GUI) wherein the GUI is being implemented as a user program interface [e.g., Abstract, Fig(s). 1-9]. MacLeod fails to specifically teach this user program interface is based on emulation data that emulates a parallel processing database environment of a target system.

However, Reiner clearly discloses the claimed Parallel User Program Interface (PUPI) that emulates the calling sequence and behavior of the UPI routines of a system [e.g., col. 31, lines 1-3]. Furthermore, Reiner discloses the Parallel UPI will decomposing a query into a plurality of sub-queries for execution, creating and managing threads in which those sub-queries are executed concurrently, and combining the results to emulate the result of the original query for a target system in a client/server environment that is build upon a parallel ORACLE database management model [e.g., col. 31, lines 1-67]. Therefore, with the combined teachings of MacLeod and Reiner in front of him/her, an ordinary skill person in the art at the time the invention was made would definite have been motivated to modify the UPI of MacLeod with the emulation control technique taught by Reiner, such that the combined system will be

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imitated with the upscale parallel emulation control for running on the other system environment as well without bothering to reinvent the wheel.

Appellant presents no further arguments.

For the above reasons, it is believed that the rejections should be sustained.


Respectfully submitted,

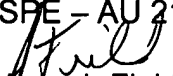
Susan Y Chen
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